

CLAIMS

1. A landing gear system for a trailer comprising:

a pair of vertically adjustable lifts adapted to attach to the trailer;

a hydraulic motor having a pair of rotational outputs; and

a pair of landing gear drive shafts, each rotationally engaging one of the respective lifts and one of the respective rotational outputs to vertically adjust the lifts.

2. The system of claim 1 wherein each rotational output rotates at a substantially equal rate to vertically adjust the lifts at substantially the same rate.

3. The system of claim 1 wherein the hydraulic motor further includes a drive shaft to which each rotational output is connected.

4. The system of claim 3 wherein the drive shaft and rotational outputs are formed as an integral one piece member.

5. The system of claim 1 wherein the hydraulic motor is mounted on the trailer.

6. The system of claim 1 wherein the landing gear drive shafts each have a longitudinal axis and the rotational outputs each have a longitudinal axis substantially coaxial with the longitudinal axes of the drive shafts.

5 7. The system of claim 1 further comprising a relief valve to relieve hydraulic pressure from the hydraulic motor to allow manual rotation of the drive shafts and rotational outputs to vertically adjust the lifts.

10 8. The system of claim 1 further comprising a hydraulic pump in fluid communication with the hydraulic motor.

9. The system of claim 8 wherein the hydraulic pump is electrically powered.

10. A landing gear system for a trailer comprising:

15 a pair of vertically adjustable lifts adapted to connect to the trailer;
a hydraulic motor having at least one rotational output;
a landing gear drive shaft extending between and rotationally engaging the pair of lifts to vertically adjust the lifts; and
a drive shaft engagement mechanism engaging the at least one rotational
20 output and the drive shaft to transfer rotational motion from the at least one rotational output to the drive shaft.

11. The system of claim 10 wherein the drive shaft engagement transfers the rotational motion so that the ratio of rotation of the at least one rotational output to rotation of the drive shaft is substantially 1:1.

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12. The system of claim 10 wherein the drive shaft engagement mechanism is free of a reduction gear mechanism.

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13. The system of claim 10 wherein the system further comprises a relief valve to relieve hydraulic pressure from the hydraulic motor to allow manual rotation of the drive shaft and at least one rotational output to vertically adjust the lifts:

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14. The system of claim 10 wherein the drive shaft engagement mechanism comprises a gear attached to the drive shaft and a gear attached to the rotational output, the gears rotationally engaging one another.

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15. The system of claim 14 wherein the gears are disengageable from one another to allow manual rotation of the drive shaft to vertically adjust the lifts.

16. The system of claim 10 wherein the drive shaft engagement mechanism comprises a gear attached to the drive shaft, a gear attached to the rotational output and at least one intermediate gear selectively rotationally engaging the drive shaft gear and the output gear; and in which the at least one intermediate

gear is disengageable from at least one of the drive shaft gear and the rotational output gear to allow manual rotation of the drive shaft to vertically adjust the lifts.

5 17. The system of claim 10 wherein the drive shaft engagement mechanism comprises a pair of sprockets, one of which is attached to the drive shaft and one of which is attached to the at least one rotational output; and in which a chain engages the pair of sprockets.

10 18. The system of claim 17 wherein the chain is selectively disengageable from at least one of the pair of sprockets to allow manual rotation of the drive shaft to vertically adjust the lifts.

15 19. The system of claim 18 wherein the drive shaft engagement mechanism further comprises a chain tensioner selectively engaging the chain and moveable between tightened and loosened positions; and in which the chain is disengageable from at least one of the pair of sprockets in the loosened position to allow manual rotation of the drive shaft to vertically adjust the lifts.

20 20. The system of claim 10 further comprising a relief valve to relieve hydraulic pressure from the hydraulic pump to allow manual rotation of the drive shafts and rotational outputs to vertically adjust the lifts.

21. In combination, a trailer, a landing gear system for the trailer and a vehicle having an electrical power source and being adapted to connect to the trailer, the landing gear system comprising:

a pair of vertically adjustable lifts adapted to connect to the trailer;

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a hydraulic motor having a pair of rotational outputs;

a pair of landing gear drive shafts, each rotationally engaging one of the respective lifts and one of the respective rotational outputs to vertically adjust the lifts; and

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a hydraulic pump in fluid communication with the hydraulic motor and powered by the vehicle electrical power source.